

### **WHAT IS CLAIMED IS:**

1. An electrically driven hub comprising:

a hub (1) having a chamber (10) defined therein and a cover (12) connected to the hub (1) to seal the chamber (10);

5           an electrical mechanism (2) received in the chamber (10) so as to drive the hub (1) and comprising an electrical motor (20) including a stator (21) and a rotor (22) which is rotated relative to the stator (21), a first fixed shaft (23) connected to a first end of the stator (21) and a second fixed shaft (24) connected to a second end of the stator (21), an output shaft (25) connected to the rotor (22);

10           a planetary gear system (3) having a sun gear (30) which is mounted to the output shaft (25), a support board (31) fixed to electrical motor (20) and having a plurality of planet gears (33) connected thereto by pivotal rods (32), and the sun gear (30) matched with the planet gears (33), a sub-gear (34) co-axially connected to each of the planet gears (33);

15           a gear ring (4) for driving the hub (1) and having teeth (40) defined in an inner periphery thereof, the teeth (40) matched with the sub-gears (34), and

two bearings (5) respectively connected to the first fixed shaft (23) and the second fixed shaft (24) and the hub (1) so that the hub (1) is rotatable relative to the electrical mechanism (2).

20           2. The hub as claimed in claim 1, wherein a one-way clutch (6) is connected between the hub (1) and the electrical mechanism (2).

3. The hub as claimed in claim 2, wherein the clutch (6) is located between the gear ring (4) and the hub (1) and includes a positioning ring (60) mounted to an

outer periphery of the gear ring (4), a plurality of holes (61) defined in the gear ring (4);

a plurality of pawl members (62) pivotably engaged with the holes (61) in the positioning ring (60), a first end (620) of each of the pawl members (62) contacting the outer periphery of the gear ring (4) for driving the gear ring (4) in one direction, a second end (621) of each of the pawl members (62) having a recess (622) and being accessible from an outer periphery of the positioning ring (60);

a flexible ring (63) engaged with the recesses (622) of the pawl members (62), and

a fixed ring (64) mounted to the positioning ring (60) and fixed to the cover (12).

4. The hub as claimed in claim 3, wherein the fixed ring (64) of the one-way clutch (6) includes a plurality of notches (640) and the cover (12) has an annular groove (120) so as to receive the fixed ring (64) therein, a plurality of blocks (121) located in the annular groove (120) and the notches (640) of the fixed ring (64) being engaged with the blocks (121).

5. The hub as claimed in claim 1, wherein the bearings (5) are one-way bearings.

6. The hub as claimed in claim 1, wherein the teeth (40) of the gear ring (4) and teeth (340) of the sub-gears (34) are bevel teeth.

7. The hub as claimed in claim 1, wherein teeth (300) of the sun gear (30) and teeth (330) of the planet gears (33) are bevel teeth.

8. The hub as claimed in claim 1, wherein the fixed shaft (23), the second shaft (24) and the output shaft (25) share a common axis.

9. The hub as claimed in claim 1, wherein the second shaft (24) is connected to the support board (31).

5        10. The hub as claimed in claim 1, wherein one of the bearings (5) is located between the first fixed shaft (23) and the cover (12) of the hub (1), the other bearing (5) is located between the second shaft (24) and the cover (12).